

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re the Application of:

TANIMOTO et al.

Serial No.:

Divisional of 09/206,161,  
filed December 7, 1998

Filed: Herewith

For: CLOSED HEAT-DECOMPOSING APPLIANCE,  
PRETREATMENT METHOD OF SAMPLE USING IT,  
ANALYTICAL METHOD AND DEVICE THEREFOR

**PRELIMINARY AMENDMENT**

Assistant Commissioner of Patents  
Washington, D.C. 20231

Sir:

Prior to initial examination, please amend the captioned application as follows.

IN THE CLAIMS

Cancel claim 1 without prejudice or disclaimer.

Rewrite the following claims.

**2 (amended).** A pretreatment method of a sample comprising the steps of setting up the sample which may sometimes contain organics in [the closed] a heat-decomposing appliance [of Claim 1,] comprising, in the absence of firing means:

- a) a heating section in the form of an axially aligned tube, open at only one of two opposing axial ends, having a length between said opposing axial ends of at least

10 cm and being molded of material that withstands (i) corrosive gases, (ii) oxidative corrosion, and (iii) heating to a temperature of at least 600°C; and

- b) an introducing section that cooperates with the open end of said tube to seal the open end and, thereby, close said heating tube for heat decomposition when containing organic components, said introducing section including means for introducing liquid through said introducing section into said heating tube when closed;

heating of said appliance being effected only by external means, said appliance containing no source of heat;

filling up the appliance with oxygen and closing the appliance, then heating the appliance to decompose the organics into testing components, followed by cooling the appliance, and thereafter introducing the absorbing liquid into said [closed] heat-decomposing appliance to absorb the testing components produced in said sample.

**3 (amended).** The pretreatment method of a sample of Claim 2, wherein the testing [component(s) is(are)] components are one kind or two or more kinds selected from [a] the group consisting of halogen and sulfur.

**4 (amended).** The pretreatment method of a sample of Claim 2 [or Claim 3], wherein the amount of oxygen gas to be filled up is not less than 2.5 times the amount of oxygen gas required for complete combustion of the sample.

**5 (amended).** A device for heat-decomposing a [the] sample which may sometimes contain organics using the pretreatment method according to Claim 2 [closed heat-decomposing appliance of Claim 1], comprising an appliance-installing section to install said closed heat-decomposing appliance, a heating means to heat-decompose the sample in said closed heat-decomposing appliance and a moving means to reversibly move said closed heat-decomposing appliance installed at said appliance-installing section to said heating means.

**6 (amended).** A pretreatment method of sample using the device of Claim 5, comprising the steps of setting up the sample which may sometimes contain organics together with oxygen in the [closed] heat-decomposing appliance [of Claim 1 and] closing, and then heating said [closed] heat-decomposing appliance with the device [of Claim 5] to decompose the organics which may be sometimes contained in said sample.

**7 (amended).** A device of claim 5 for heat-decomposing [the] a sample and dissolving [the] testing components produced, said device further comprising[, adding further to the device for heat-decomposing sample of Claim 5, a] cooling means to cool the [closed] heat-decomposing appliance after heat-decomposition of the sample in said [closed] heat-decomposing appliance, [an] injecting means to inject the absorbing liquid into said cooled [closed] heat-decomposing appliance, [a] mixing means to stir and/or shake for making the absorbed liquid in said [closed] heat-decomposing appliance uniform, and [a] moving means to reversibly move said [closed] heat-decomposing appliance from an appliance-installing section to any of said heating means, cooling means, injecting means [and] or mixing means.

**8 (amended).** A pretreatment method of a sample using the device of Claim 7, comprising the steps of setting up the sample which may sometimes contain organics together with oxygen in the [closed] heat-decomposing appliance [of Claim 1] and closing, then heating said [closed] heat-decomposing appliance with said heating means to decompose the organics which may be sometimes contained in said sample, thereby producing the testing components, cooling said [closed] heat-decomposing appliance, injecting the absorbing liquid into said heat-decomposing appliance to dissolve the testing components, and further stirring and/or shaking said [closed] heat-decomposing appliance to make said absorbed liquid in the [closed] heat-decomposing appliance uniform[, with the device of Claim 7].

**9 (amended).** A device of Claim 7 for analyzing [the] testing components, further comprising[, adding further to the device for heat-decomposing the sample and dissolving the testing components produced of Claim 7, an] analytical means to analyze the testing components in the absorbing liquid and [a] moving means to sample [part of] the absorbing liquid inside the [closed] heat-decomposing appliance and [to] moving the absorbing-liquid sample to said analytical means.

**10 (amended).** An analytic method using the device of Claim 9, comprising the steps of setting up the sample which may sometimes contain organics together with oxygen in the [closed] heat-decomposing appliance [of Claim 1] and closing, then heating said [closed] heat-decomposing appliance with said heating means to decompose the organics, followed by cooling, injecting the absorbing liquid to dissolve the testing components, stirring and/or shaking said [closed] heat-

decomposing appliance to make the absorbed liquid in the [closed] heat-decomposing appliance uniform, and then analyzing the testing components in absorbed liquid [with the device of Claim 9].

**11 (amended).** A device [in the device] of [Claim 7 or] Claim 9, further comprising a wash device containing:

- c) a needle pipe for injecting absorbing liquid into the heat-decomposing appliance,
- d) a motor buret,
- e) a switchable valve with actuator,  
[a moving means of needle pipe to pierce through packing or septum of the [closed] heat-decomposing appliance and to move to washing boat, and]
- f) a washing port to wash the [contaminated] needle pipe, [as an injecting means of absorbing liquid into the [closed] heat-decomposing appliance] and
- g) means for moving the needle pipe to pierce through packing or septum of the introducing section of the heat-decomposing appliance and, then, move the needle pipe to the washing port.

**12 (amended).** A [device in the device of Claim 7 or] of Claim 9, said mixing means comprising [a] means to reciprocate the [closed] heat-decomposing appliance in the axial direction [of closed heat-decomposing appliance,] while axially rotating [it centering to the axis of closed] the heat-decomposing appliance, leaving horizontal[, as a mixing means].

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**13 (amended).** A device [in the device of Claim 7 or] of Claim 9, said moving means comprising a cross type motor robot with a mechanical hand or a mechanical hand and cross type motor robot with axis for rotating it[, as a moving means].

***REMARKS***

Original claims 2-13, as amended hereby, are presented for consideration.

Changes to original claims 2-13 are made, hereby, in order to more clearly define the instant invention.

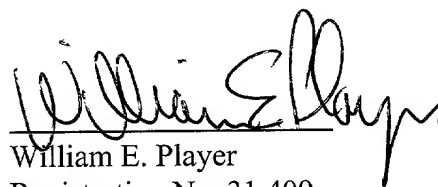
The present claims were withdrawn from consideration in the parent application pursuant to a restriction requirement under 35 USC 121.

Favorable action is requested.

Respectfully submitted,

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